

serving and somewhat unreliable.¹⁶² Nevertheless, such evidence can be useful in understanding the level of knowledge of a "person of ordinary skill" at the relevant time period.¹⁶³

The goal of the claim construction process is, of course, to determine what the claim means to an artisan of ordinary skill in the relevant field.¹⁶⁴ Although this presents an "objective" question like the familiar "reasonable person" standard in tort law, one can readily see that a *particular* artisan's *subjective* opinion testimony about the meaning of the claim might be helpful in construing the claim. Due to the *objective* nature of interpretation, however, the inventor's subjective intent in using a particular term offers little probative weight, except as documented in the prosecution history.¹⁶⁵ Furthermore, testimony by a "patent expert" not skilled in the art regarding

¹⁶² *Eastman Kodak*, 114 F.3d at 1555, 42 U.S.P.Q.2d (BNA) at 1742 ("As often occurs, each party presented experts vouching for their usage of the crystallization temperature limitation in the claim.").

¹⁶³ *See id.* at 1555-56, 42 U.S.P.Q.2d (BNA) at 1742; *Key Pharm. v. Hercon Labs. Corp.*, 161 F.3d 709, 48 U.S.P.Q.2d 1991 (Fed. Cir. 1998) (court relied on what the FDA believed was the effective dosage of a compound in order to construe the claim term "effective dosage"); *Fromson v. Anitec Printing Plates, Inc.*, 132 F.3d 1437, 1444-45, 45 U.S.P.Q.2d (BNA) 1269, 1274 (Fed. Cir. 1997) (court relied on extrinsic evidence to adopt claim construction consistent with preferred embodiment and purposes of invention, stating "Extrinsic evidence may be particularly helpful to the court when a specific technical aspect that is of potentially dispositive weight was not discussed in the specification or explored during the patent prosecution.").

¹⁶⁴ *E.g., Eastman Kodak*, 141 F.3d at 1555, 42 U.S.P.Q.2d (BNA) at 1742.

¹⁶⁵ *Markman I*, 52 F.3d at 985, 34 U.S.P.Q.2d (BNA) at 1335 (Indeed, "it is not unusual for there to be a significant difference between what an inventor thinks his patented invention is and what the ultimate scope of the claims is after allowance by the PTO.").

special form of extrinsic evidence, are no longer considered extrinsic evidence at all.¹⁵⁷ They should be consulted as aids to the court.

A district court may always consult extrinsic evidence to educate itself about the technology at issue.¹⁵⁸ Such evidence "may be helpful to explain scientific principles, the meaning of technical terms, and terms of art that appear in the patent and prosecution history."¹⁵⁹ The most common form of extrinsic evidence, testimony of one skilled in the art about the meaning of disputed claim terms, almost always satisfies the requirements for admission.¹⁶⁰

While using the evidence to gain an understanding of the relevant technology is proper, whether the court should rely on such evidence when construing the claims presents an entirely separate issue. The Federal Circuit carefully restricted the courts' ability to rely on extrinsic evidence because it fails to provide the type of public notice that competitors are entitled to rely upon when ascertaining the scope of the claimed invention.¹⁶¹ In addition, expert testimony prepared for litigation is inevitably self-

¹⁵⁷ *See Teleflex, Inc. v. Ficosa N. Am.*, 299 F.3d 1313, 1325, 63 U.S.P.Q.2d (BNA) 1374, 1380 (Fed. Cir. 2002).

¹⁵⁸ *Interactive Gift Express, Inc. v. Compuserve, Inc.*, 256 F.3d 1323, 1332, 59 U.S.P.Q.2d (BNA) 1401, 1408 (Fed. Cir. 2001).

¹⁵⁹ *Markman I*, 52 F.3d 967, 980, 34 U.S.P.Q.2d (BNA) 1321, 1330 (Fed. Cir. 1995), *aff'd*, 517 U.S. 370, 38 U.S.P.Q.2d (BNA) 1461 (1996).

¹⁶⁰ *Eastman Kodak Co. v. Goodyear Tire & Rubber Co.*, 114 F.3d 1547, 1555, 42 U.S.P.Q.2d (BNA) 1737, 1742 (Fed. Cir. 1997), *overruled on other grounds by Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 46 U.S.P.Q.2d (BNA) 1169 (Fed. Cir. 1998) (en banc).

¹⁶¹ *Vitronics Corp. v. Conception, Inc.*, 90 F.3d 1576, 1583, 39 U.S.P.Q.2d (BNA) 1573, 1577 (Fed. Cir. 1996).

to understand claim elements and design around a patent.¹⁷² For these reasons, the courts apply a separate standard to prior art and secondary sources like dictionaries.

1. Dictionaries/Treatises

For dictionaries and treatises that *merely* define words without regard to a particular issue, the intrinsic-extrinsic standards have blended. At least one panel of the Federal Circuit held that these materials are no longer "extrinsic evidence" or even a "special form of extrinsic evidence."¹⁷³

The courts increasingly consult dictionaries and technical treatises as a beginning point when searching for the ordinary meaning of a term.¹⁷⁴ The Federal Circuit cautioned, however, against the use of non-scientific dictionaries to define technical terms.¹⁷⁵

2. Prior Art

¹⁷² See *Markman I*, 52 F.3d at 978-79, 34 U.S.P.Q.2d (BNA) at 1329.

¹⁷³ Tex. Digital Sys. v. Telegenix, Inc., 308 F.3d 1193, 1203, 64 U.S.P.Q.2d (BNA) 1812, 1819 (Fed. Cir. 2002).

¹⁷⁴ See, e.g., *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366, 1369-70, 62 U.S.P.Q.2d (BNA) 1658, 1662, 1665 (Fed. Cir. 2002) (citing numerous cases which relied on dictionary definitions to establish the ordinary meaning given a claim term by those skilled in the art); *Optical Disc Corp. v. Del Mar Avionics, Inc.*, 208 F.3d 1324, 1335, 54 U.S.P.Q.2d (BNA) 1289, 1295 (Fed. Cir. 2000); *Karlin Tech., Inc. v. Surgical Dynamics, Inc.*, 177 F.3d 968, 971, 50 U.S.P.Q.2d (BNA) 1465, 1468 (Fed. Cir. 1999).

¹⁷⁵ *Dow Chem. Co. v. Sumitomo Chem. Co.*, 257 F.3d 1364, 1372-73, 59 U.S.P.Q.2d (BNA) 1609, 1614 (Fed. Cir. 2001); *Multiform Desiccants, Inc. v. Medzam, Ltd.*, 133 F.3d 1473, 1478, 45 U.S.P.Q.2d (BNA) 1429, 1433 (Fed. Cir. 1998).

how the patent should be construed is entitled to little, if any, deference.¹⁶⁶ Such testimony is no more than a legal opinion, and the court must ultimately come up with its own opinion.¹⁶⁷ The testimony of scientific experts, or even a court-appointed expert, may enlighten the process.

C. Reliable Evidence: Prior Art and Dictionaries

Courts have expressed a preference for certain types of extrinsic evidence over others, treating those preferred types as quasi-intrinsic.¹⁶⁸ In *Vitronics*, the court posited that prior art references and dictionaries were more reliable sources of evidence than expert testimony for understanding how one skilled in the art would interpret claim terms.¹⁶⁹ As compared to expert testimony, which often only indicates what a particular expert believes a term to mean in the context of the dispute, prior art references and dictionaries provide better objective indications of what those skilled in the art generally believe a certain term means.¹⁷⁰ In addition, texts created before the dispute arose are much less likely to present a biased view of technical terms than expert testimony prepared for litigation.¹⁷¹ Finally, unlike expert testimony, prior art documents and dictionaries are available to the public in advance of litigation and thus permit competitors to attempt

¹⁶⁶ *Id.* at 983, 34 U.S.P.Q.2d (BNA) at 1332-33.

¹⁶⁷ *Id.*

¹⁶⁸ *Dow Chem. Co. v. Sumitomo Chem. Co.*, 257 F.3d 1364, 1372, 59 U.S.P.Q.2d (BNA) 1609, 1614 (Fed. Cir. 2001).

¹⁶⁹ *Vitronics*, 90 F.3d at 1585, 39 U.S.P.Q.2d (BNA) at 1579.

¹⁷⁰ *Id.*

¹⁷¹ *Id.*

of its existence, would have no reason to distinguish the intended meaning from the meaning given the term in the prior art. Nonetheless, uncited prior art can indicate what those of ordinary skill in the art believe a term to mean at the time of the reference.¹⁸¹

D. Other Factors

There are other factors that courts have either considered or refused to consider in construing claims.

1. Construe Patents so as to Sustain Their Validity

The Supreme Court held that patents "are to receive a liberal construction, and . . . are, if practicable, to be so interpreted as to uphold and not destroy the right of the inventor."¹⁸² Accordingly, the court, if possible, should construe claims in a way that avoids ensnaring the prior art.¹⁸³ A blind application of this canon, however, may lead a court to rewrite, rather

of the art at the time the invention was made, from the prior art or from experts in the technologic field.").

¹⁸¹ *Vitronics*, 90 F.3d at 1584, 39 U.S.P.Q.2d (BNA) at 1577.

¹⁸² *Turrill v. Mich. S. & N. Ind. R.R.*, 68 U.S. 491, 510 (1863).

¹⁸³ *Harris Corp. v. IXYS Corp.*, 114 F.3d 1149, 1153, 43 U.S.P.Q.2d (BNA) 1018, 1021 (Fed. Cir. 1997). The phrase "ensnaring the prior art" refers to the rule that a claim may not read upon the prior art. See, e.g., *Wilson Sporting Goods v. David Geoffrey & Assoc.*, 904 F.2d 677, 685, 14 U.S.P.Q.2d (BNA) 1942, 1948 (Fed. Cir. 1990), *overruled on other grounds by* *Cardinal Chem. Co. v. Morton Int'l, Inc.*, 508 U.S. 83, 26 U.S.P.Q.2d (BNA) 1721 (1993).

Prior art is split into two categories for claim construction purposes: (1) cited prior art and (2) uncited prior art. The former is treated as intrinsic evidence, while the latter is treated as extrinsic evidence. Prior art that is incorporated anywhere in the patent, including the list of references found on the face of the patent and patents discussed in the specification, is considered *cited prior art*, while prior art that is not referenced somewhere in the patent is considered *uncited prior art*.

Cited prior art provides public notice of prior art that may shed light on the meaning of a disputed claim term. It may indicate either what persons of ordinary skill in the art believe the term to mean or that the patentee intended to adopt that meaning.¹⁷⁶ "In its broader use as source material, the prior art cited in the file wrapper gives clues as to what the claims do not cover."¹⁷⁷ Due to these properties, the courts afford cited prior art a probative value similar to a patent's file history¹⁷⁸ and treat it as a form of intrinsic evidence.¹⁷⁹

Uncited prior art, however, fails to provide such reliable evidence and is treated as extrinsic evidence.¹⁸⁰ The patentee, presumably unaware

¹⁷⁶ *Arthur A. Collins, Inc. v. Northern Telecom Ltd.*, 216 F.3d 1042, 1045, 55 U.S.P.Q.2d (BNA) 1143, 1145 (Fed. Cir. 2000).

¹⁷⁷ *Autogiro Co. of Am. v. United States*, 384 F.2d 391, 399, 155 U.S.P.Q. (BNA) 697, 704 (Ct. Cl. 1967).

¹⁷⁸ *Vitronics Corp. v. Conception, Inc.*, 90 F.3d 1576, 1583, 39 U.S.P.Q.2d (BNA) 1573, 1578 (Fed. Cir. 1996).

¹⁷⁹ *Tate Access Floors, Inc. v. Interface Architectural Res., Inc.*, 279 F.3d 1357, 1372, 61 U.S.P.Q.2d (BNA) 1647, 1658 (Fed. Cir. 2002).

¹⁸⁰ *Zodiac Pool Care, Inc. v. Hoffinger Indus., Inc.*, 206 F.3d 1408, 1414, 45 U.S.P.Q.2d (BNA) 1269, 1272 (Fed. Cir. 2000); see also *Fromson v. Anitec Printing Plates, Inc.*, 132 F.3d 1437, 1442, 45 U.S.P.Q.2d (BNA) 1269, 1272 (Fed. Cir. 1997) ("The court may gain understanding of the state

than liberally construe, claims in an attempt to preserve their validity.¹⁸⁴ The court may not import limitations from the specification into a claim absent a claim term that requires further clarification.¹⁸⁵ Thus, "if the only claim construction that is consistent with the claim's language and the written description renders the claim invalid, then the axiom does not apply, and the claim is simply invalid."¹⁸⁶

2. Claims Should Be Construed Narrowly

A related canon applies when the court is presented with two *equally plausible* meanings for a disputed claim term. When confronted with this situation, the court should adopt the narrower meaning in order to promote the public notice function performed by the claims.¹⁸⁷ The Federal Circuit

¹⁸⁴ Rhine v. Casio, Inc., 183 F.3d 1342, 1345, 51 U.S.P.Q.2d (BNA) 1377, 1379 (Fed. Cir. 1999); see also K-2 Corp. v. Salomon, 191 F.3d 1356, 1364, 52 U.S.P.Q.2d (BNA) 1001, 1006 (Fed. Cir. 1999) ("Courts do not rewrite claims; instead we give effect to the terms chosen by the patentee.").

¹⁸⁵ Renishaw PLC v. Marposs Societa' Per Azioni, 158 F.3d 1243, 1249, 48 U.S.P.Q.2d (BNA) 1117, 1121 (Fed. Cir. 1998) (quoting *McCarthy v. Lehigh Val R.R.*, 160 U.S. 110, 116 (1895) ("We know of no principle of law which would authorize us to read into a claim an element which is not present, for the purpose of making out a case of novelty or infringement. The difficulty is that if we once begin to include elements not mentioned in the claim in order to limit such claim . . . we should never know where to stop."))

¹⁸⁶ Rhine, 183 F.3d at 1345, 51 U.S.P.Q.2d (BNA) at 1379; see also *Tate Access Floors, Inc. v. Interface Architectural Res., Inc.*, 279 F.3d 1357, 1372, 61 U.S.P.Q.2d (BNA) 1647, 1658 (Fed. Cir. 2002) ("[W]here the claim language is clear we must accord it full breadth even if the result is a claim that is clearly invalid.").

¹⁸⁷ *Athletic Alternatives, Inc. v. Prince Mfg., Inc.*, 73 F.3d 1573, 1581, 37 U.S.P.Q.2d (BNA) 1365, 1372 (Fed. Cir. 1996) ("Where there is an *equal* choice between a broader and a narrower meaning of a claim, and there

stated that where a "claim is susceptible to a broader and a narrower meaning, and the narrower one is clearly supported by the intrinsic evidence while the broader one raises questions of enablement under § 112, ¶ 1, we[, the Federal Circuit,] will adopt the narrower of the two."¹⁸⁸

3. Parties' Positions

A court is not limited by the positions espoused by the parties to conduct its claim construction. For instance, in *Exxon Chemical Patents v. Lubrizol Corp.*, the court dealt with claims for a lubricating compound "comprising" certain specified chemicals.¹⁸⁹ Both parties presented claim constructions.¹⁹⁰ Exxon supported its interpretation with the testimony of an expert—"an experienced claim drafter"—who testified that the format of

is an enabling disclosure that indicates that the applicant is at least entitled to a claim having the narrower meaning, we consider the notice function of the claim to be best served by adopting the narrower meaning." (emphasis added).

¹⁸⁸ *Digital Biometrics, Inc. v. Identix, Inc.*, 149 F.3d 1335, 1344, 47 U.S.P.Q.2d (BNA) 1418, 1424 (Fed. Cir. 1998); see also *Athletic Alternatives*, 73 F.3d at 1581, 37 U.S.P.Q.2d (BNA) at 1372. But see *N. Telecom Ltd. v. Samsung Elec. Co.*, 215 F.3d 1281, 1295, 55 U.S.P.Q.2d (BNA) 1065, 1075 (Fed. Cir. 2000) ("*Athletic Alternatives* considers the case where reasoned analysis leads to two clear and distinct definitions of claim language. It does not apply here, where confusing statements in the prosecution history simply fail to overcome the ordinary meaning of the . . . limitation.").

¹⁸⁹ 64 F.3d 1553, 1555, 35 U.S.P.Q.2d (BNA) 1801, 1802 (Fed. Cir. 1995), cert. denied, 518 U.S. 1020 (1996).

¹⁹⁰ *Id.*

Exxon's claims was "a standard form for such a product."¹⁹¹ Also, he testified that, "to one of ordinary skill in the art, the claims as written cover a product" resulting from mixing the initial ingredients.¹⁹² A majority of the Federal Circuit panel rejected both Exxon's and Lubrizol's interpretations.

A court should be cautious in applying the Federal Circuit's reasoning, however. Judge Mayer, in writing on the denial of Exxon's motion for reconsideration, stated that the majority

divined an interpretation of the claim that occurred to no one else in this extensive litigation. None of the parties or the trial court offered the interpretation that these two judges chose, and none of the extensive extrinsic evidence about how those skilled in the art would understand the claim supports it.¹⁹³

This decision also risks abandoning the "skilled in the art" standard. Furthermore, when the court rejects the constructions proposed by the parties and replaces them with its own interpretation, the parties are deprived of an opportunity to address the validity of the court's interpretation.¹⁹⁴ This may result in an erroneous interpretation that could

¹⁹¹ *Id.* at 1568, 35 U.S.P.Q.2d (BNA) at 1812.

¹⁹² *Id.*

¹⁹³ Exxon Chem. Patents, v. Lubrizol Corp., 77 F.3d 450, 451, 37 U.S.P.Q.2d (BNA) 1767, 1770 (Fed. Cir. 1996) (rehearing denied).

¹⁹⁴ See CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1371, 62 U.S.P.Q.2d (BNA) 1658, 1666 (Fed. Cir. 2002) (The court should consider "whether the trial court and the party claiming waiver had fair notice and an opportunity to address the issue concerning the scope of a claim limitation" in determining whether a party has waived a claim construction argument.). A court should heed these considerations when reaching a claim construction other than one proposed by the

have been avoided had the parties been provided the opportunity to address the incorrect construction.

E. Means-Plus-Function Claims

1. Generally

Pursuant to 35 U.S.C. § 112, ¶ 6, claim elements may be expressed functionally as a means for or step for performing a specified function. Elements described in functional language are called "means-plus-function" elements.¹⁹⁵ If an element is described this way, it will be construed to cover only the corresponding structure described in the specification and its equivalents.¹⁹⁶ A court determines these equivalents since they are part of the breadth of the literal claim.¹⁹⁷ However, the fact-finder determines what constitutes an equivalent under the doctrine of equivalents.¹⁹⁸

2. Language Required to Invoke Means-Plus-Function

Inclusion of the words "means for" or "step for" in a claim element, followed by the recitation of a function, invokes a presumption that the element should be analyzed as a means-plus-function element under § 112,

parties.

¹⁹⁵ Med. Instrumentation & Diagnostics Corp. v. Elekta AB, 344 F.3d 1205, 1210, 68 U.S.P.Q.2d (BNA) 1263, 1267 (Fed. Cir. 2003).

¹⁹⁶ 35 U.S.C. § 112, ¶ 6 (2000).

¹⁹⁷ Jackson v. Thomson Consumer Elecs., Inc., 139 F. Supp. 2d 1003, 1007 (S.D. Ind. 2001) (citing 35 U.S.C. § 112 ¶ 6).

¹⁹⁸ See Toro Co. v. White Consol. Indus., Inc., 266 F.3d 1367, 1370, 60 U.S.P.Q.2d (BNA) 1437, 1438 (Fed. Cir. 2001). But see ROBERT C. KAHL, PATENT CLAIM CONSTRUCTION § 8.08[A], n.99 (Supp. 2003).

¶ 6.¹⁹⁹ Similarly, the absence of the word "means" creates a presumption that the element is not a "means-plus-function" element.²⁰⁰ Each of these presumptions is rebuttable by intrinsic or extrinsic evidence.²⁰¹ Whether the presumption has been rebutted depends on whether or not the claim recites sufficient structure to perform entirely the claimed function.²⁰² The claim need not recite a precise physical structure to overcome the presumption that §112, ¶ 6 applies.²⁰³

¹⁹⁹ See *Enviroco Corp. v. Clestra Cleanroom, Inc.*, 209 F.3d 1360, 1364-65, 54 U.S.P.Q.2d (BNA) 1449, 1452 (Fed. Cir. 2000); see also *Greenberg v. Ethicon Endo-Surgery*, 91 F.3d 1580, 1584, 39 U.S.P.Q.2d (BNA) 1783, 1785 (Fed. Cir. 1996). The phrase "step of" does not invoke the presumption because practitioners use "step of" for regular process limitations and "step for" when invoking step plus function. *Masco Corp. v. United States*, 303 F.3d 1316, 1327, 64 U.S.P.Q.2d (BNA) 1182, 1189 (Fed. Cir. 2002) ("[W]here a method claim does not contain the term 'steps for,' a limitation of that claim cannot be construed as a step-plus-function limitation without a showing that the limitation contains no act.").

²⁰⁰ See *Mas-Hamilton Group v. LaGard, Inc.*, 156 F.3d 1206, 1213-14, 48 U.S.P.Q.2d (BNA) 1010, 1016 (Fed. Cir. 1998); *Greenberg*, 91 F.3d at 1584, 39 U.S.P.Q.2d (BNA) at 1787.

²⁰¹ *Personalized Media Comm., LLC v. Int'l Trade Comm'n*, 161 F.3d 696, 704, 48 U.S.P.Q.2d (BNA) 1880, 1886 (Fed. Cir. 1998).

²⁰² *TurboCare Div. of Demag Delaval Turbomachinery Corp. v. Gen. Elec. Co.*, 264 F.3d 1111, 1120-21, 60 U.S.P.Q.2d (BNA) 1017, 1024 (Fed. Cir. 2001).

²⁰³ *Watts v. XL Sys.*, 232 F.3d 877, 880, 56 U.S.P.Q.2d (BNA) 1836, 1838 (Fed. Cir. 2000); *Personalized Media*, 161 F.3d at 705, 48 U.S.P.Q.2d (BNA) at 1888 ("Even though the term 'detector' does not specifically evoke a particular structure, it does convey to one knowledgeable in the art a variety of structures known as 'detectors.'").

3. Interpretation of "Means-Plus-Function" Claims

The interpretation of a means-plus-function element under § 112, ¶ 6 requires the court to limit the element to those structures disclosed in the patent that correspond to the claimed function and their equivalents.²⁰⁴ To be a disclosed corresponding structure, the specification or prosecution history must clearly link or associate the structure to the claimed function.²⁰⁵ The determination of what constitutes a disclosed corresponding structure is a matter of claim construction and, therefore, a question of law.²⁰⁶

General statements in the written description indicating that other structures may be used to perform the claimed function do not extend the scope of disclosed corresponding structures.²⁰⁷ Furthermore, in determining the proper construction of a means-plus-function element, the court may

²⁰⁴ 35 U.S.C. § 112, ¶ 6 (2000); *O.I. Corp. v. Tekmar Co.*, 115 F.3d 1576, 1581, 42 U.S.P.Q.2d (BNA) 1777, 1780 (Fed. Cir. 1997).

²⁰⁵ 35 U.S.C. § 112, ¶ 2 (2000); *B. Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419, 1424, 43 U.S.P.Q. (BNA) 1896, 1899 (Fed. Cir. 1997); *Faroudja Labs., Inc. v. Dwin Elecs., Inc.*, 76 F. Supp. 2d 999, 1012 (N.D. Cal. 1999) ("Diagrams which do not depict any internal circuitry, such as [a box in a diagram included in the specification], cannot be properly identified as the corresponding structure in a means-plus-function element. Such diagrams provide no information about the particular structure and fail to provide adequate notice of the patent's scope.")

²⁰⁶ *Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus.*, 145 F.3d 1303, 1308, 46 U.S.P.Q.2d (BNA) 1752, 1755-56 (Fed. Cir. 1998) ("Likewise, the 'means' term in a means-plus-function limitation is essentially a generic reference for the corresponding structure disclosed in the specification. Accordingly, a determination of corresponding structure is a determination of the meaning of the 'means' term in the claim and is thus also a matter of claim construction.")

²⁰⁷ *Fonar Corp. v. Gen. Elec. Co.*, 107 F.3d 1543, 1551-52, 41 U.S.P.Q.2d (BNA) 1801, 1807 (Fed. Cir. 1997); *Faroudja*, 76 F. Supp. 2d at 1013.

import neither functional limitations not recited in the claim nor structural limitations unnecessary to perform the claimed function.²⁰⁸

In *Markman I*, the Federal Circuit left open the question of whether the determination of the range of equivalents corresponding to those disclosed structures, material, or steps is one of law or fact.²⁰⁹ Several decisions have treated it as a question of fact.²¹⁰

On a related issue, in *Odetics, Inc. v. Storage Technology Corp.*, the Federal Circuit held that the determination of "[w]hether an accused device infringes a § 112, ¶ 6 claim as an equivalent is a question of fact."²¹¹

²⁰⁸ *Wenger Mfg., Inc. v. Coating Mach. Sys., Inc.*, 239 F.3d 1225, 1233, 57 U.S.P.Q.2d (BNA) 1679, 1684-85 (Fed. Cir. 2001); *Asyst Techs., Inc. v. Empak, Inc.*, 268 F.3d 1364, 1369-71, 60 U.S.P.Q.2d (BNA) 1567, 1571-73 (Fed. Cir. 2001) ("The corresponding structure to a function set forth in a means-plus-function limitation must actually perform the recited function, not merely enable the pertinent structure to operate as intended."); *Chiuminatta*, 145 F.3d at 1308-09, 46 U.S.P.Q.2d (BNA) at 1755.

²⁰⁹ See *Markman I*, 52 F.3d 967, 977 n.8, 34 U.S.P.Q.2d (BNA) 1321, 1327 (Fed. Cir. 1995), *aff'd*, 517 U.S. 370, 38 U.S.P.Q.2d (BNA) 1461 (1996); see also *Chiuminatta*, 145 F.3d at 1308, 46 U.S.P.Q.2d (BNA) at 1756 (explaining *Markman I*).

²¹⁰ See *KAHRL, supra* note 198, § 8.08[A], n.99. *But see* *Jackson v. Thomson Consumer Elecs., Inc.*, 139 F. Supp. 2d 1003, 1008 (S.D. Ind. 2001); *Jackson v. Casio Phonemate, Inc.*, 166 F. Supp. 2d 1237, 1246 (N.D. Ill. 2001).

²¹¹ 185 F.3d 1259, 1268, 51 U.S.P.Q.2d (BNA) at 1230 (Fed. Cir. 1999); see also *Smiths Indus. Med. Sys., Inc. v. Vital Signs, Inc.*, 183 F.3d 1347, 1358, 51 U.S.P.Q.2d (BNA) 1415, 1422 (Fed. Cir. 1999) ("The determination of the contours of the corresponding structure in a means-plus-function claim, as contrasted with the question of whether an accused structure is equivalent to such a corresponding structure, is a matter of law for

Although *Odetics* and similar cases leave to the jury the determination of whether the accused device is a § 112, ¶ 6 means-plus-function equivalent, it is possible to read their holdings to apply only to the question of infringement. With this understanding, the court could determine, as a matter of law, a *range* of equivalents. Thereafter, the jury could decide, as a matter of fact, whether the accused device falls within that range and thus infringes the patented device. While the determination of the range of equivalents under the doctrine of equivalents has been found to be a question of fact,²¹² equivalents included under § 112, ¶ 6 fall within the literal scope of the claim.²¹³ Thus, the range of equivalents under § 112, ¶ 6 could be considered a matter of claim construction and, therefore, a question of law.²¹⁴

4. Comparison of Equivalence Under the Doctrine of Equivalents and § 112, ¶ 6

The test for equivalence under the doctrine of equivalents and the test for equivalence under the means-plus-function provision of § 112, ¶ 6 are "closely related" involving "similar analyses of insubstantiality of differences."²¹⁵ However, there are distinctions between the two tests.

courts to decide because it is a question of claim construction.")

²¹² *DMI, Inc. v. Deere & Co.*, 755 F.2d 1570, 1575, 225 U.S.P.Q. (BNA) 236, 239 (Fed. Cir. 1985).

²¹³ *IPPV Enter., LLC v. EchoStar Communications Corp.*, 106 F. Supp. 2d 595, 605-06 (D. Del. 2000) (citations omitted).

²¹⁴ See *Thomson Consumer Elecs.*, 139 F. Supp. 2d at 1008; *Casio Phonemate, Inc.* 166 F. Supp. 2d at 1246. *But see* *KAHRL, supra* note 198, at § 8.08[A], n.99.

²¹⁵ *Odetics*, 185 F.3d at 1267, 51 U.S.P.Q.2d (BNA) at 1229-30 (Fed. Cir. 1999); *Chiuminatta*, 145 F.3d at 1309, 46 U.S.P.Q.2d (BNA) at 1756 ("The proper test is whether the differences between the structure in the

The primary difference lies in the nature of a means-plus-function claim. The function is recited within the claim itself, therefore the literal scope of the claim requires that the element in the accused device perform the identical function.²¹⁶ The court then applies the insubstantial differences test with respect to the corresponding structure.²¹⁷ The result is a modification of the tripartite function-way-result test endorsed by the Supreme Court in *Graver Tank & Manufacturing Co. v. Linde Air Products Co.*²¹⁸ Two structures are equivalents under § 112, ¶ 6 if they “perform the identical function, in substantially the same way, to achieve substantially the same result.”²¹⁹ Interchangeability remains an important factor in determining the range of equivalents under § 112, ¶ 6;²²⁰ however, “[a]lmost by definition, two structures that perform the same function may be substituted for one another.”²²¹ The court must remember that pursuant to § 112, ¶ 6 a means-

accused device and any disclosed in the specification are insubstantial.”)

²¹⁶ *Odetics*, 185 F.3d at 1267, 51 U.S.P.Q.2d (BNA) at 1229.

²¹⁷ *Id.*, 51 U.S.P.Q.2d (BNA) at 1229-30.

²¹⁸ 339 U.S. 605, 608, 85 U.S.P.Q. (BNA) 328, 330 (1950).

²¹⁹ *Kemco Sales, Inc. v. Control Papers Co.*, 208 F.3d 1352, 1364, 54 U.S.P.Q.2d (BNA) 1308, 1315 (Fed. Cir. 2000) (emphasis added).

²²⁰ *Chiuminatta*, 145 F.3d at 1309-10, 46 U.S.P.Q.2d (BNA) at 1357 (citing *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 609, 85 U.S.P.Q. (BNA) 328, 331 (1950)).

²²¹ *Id.* at 1309, 46 U.S.P.Q.2d (BNA) at 1357.

plus-function element does not read upon all means for performing the recited function.²²²

The manner in which the court conducts the equivalence analysis differs between the two types of equivalents as well. Under the doctrine of equivalents, the court should compare two elements on an element-by-element basis,²²³ but under §112, ¶ 6, the court compares the overall structures.²²⁴ The claim limitation is the overall structure corresponding to the claimed function; consequently, structures with different numbers of parts may still be equivalent under § 112, ¶ 6.²²⁵

The final difference is temporal. An equivalent structure or act under § 112, ¶ 6 must have been available when the patent issued.²²⁶ Technology that did not exist at the time the patent issued, called “after arising technology,” cannot be a § 112, ¶ 6 equivalent, but may be an equivalent under the doctrine of equivalents.²²⁷

V. TIMING AND PROCEDURE FOR CONSTRUING THE CLAIMS

²²² See *Greenberg v. Ethicon Endo-Surgery*, 91 F.3d 1580, 1582, 39 U.S.P.Q.2d (BNA) 1783, 1784-85 (Fed. Cir. 1996).

²²³ *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1259-61, 9 U.S.P.Q.2d (BNA) 1962, 1968-69 (Fed. Cir. 1989).

²²⁴ *Odetics*, 185 F.3d at 1268, 51 U.S.P.Q.2d (BNA) at 1230.

²²⁵ *Id.*

²²⁶ *AI-Site Corp. v. VSI Int'l, Inc.*, 174 F.3d 1308, 1320, 50 U.S.P.Q.2d (BNA) 1161, 1168 (Fed. Cir. 1999); *Hughes Aircraft Co. v. United States*, 717 F.2d 1351, 1365, 219 U.S.P.Q. (BNA) 473, 483 (Fed. Cir. 1983).

²²⁷ *Chiuminatta*, 145 F.3d at 1310, 46 U.S.P.Q.2d (BNA) at 1758.

Markman I charged district courts with the task of construing patent claims, but it did not instruct them how or when to perform that task. As a result, district courts have experimented with a number of different approaches regarding the timing of claim construction, the type of evidence the court will hear, and the manner in which the evidence will be presented.²²⁸ At least one district, the Northern District of California, has amended its local rules to include mandatory procedures regarding claim construction that are applicable in all patent cases filed in that district.²²⁹ Other courts and judges have adopted procedures that are not embodied in formal court rules but are implemented on a regular basis, sometimes through the use of standardized case management orders.²³⁰ Finally, those who have not adopted procedures continue to address the procedural issues surrounding claim construction on a case-by-case basis.

A. Timing of the Markman Proceeding

²²⁸ Kenneth R. Adamo, *Get on Your Marks, Get Set, Go; Or "And Just How Are We Going to Effect Markman Construction in This Matter, Counsel?"* PLI PATENTS, COPYRIGHTS, TRADEMARKS, AND LITERARY PROPERTY COURSE, HANDBOOK SERIES NO. 665, at 603 (2001).

²²⁹ See *infra* Part V.D.

²³⁰ See, e.g., <http://www.txed.uscourts.gov> (Judge Ward of the Eastern District of Texas uses rules that are nearly identical to those in the Northern District of California); <http://www.ded.uscourts.gov/Index.htm> (Chief Judge Robinson of the District of Delaware requires the parties to create a Joint Claim Construction Statement if the court does not conduct an early claim construction).

Although *Markman I* does not require a district court to construe claims before trial commences,²³¹ many courts have recognized the benefits of doing so.²³² Construing the claims prior to trial allows the parties to present at trial only the evidence pertinent to infringement and validity under the court's claim construction. For jury trials, this eliminates the need to present complicated and potentially unnecessary evidence based on various alternate claim constructions. This both reduces the length of the trial and limits jury confusion. Pre-trial *Markman* Proceedings also save time at trial by eliminating evidence on claim construction, an issue that the jury no longer decides. Finally, pre-trial claim construction prevents any delay of the jury's deliberations that might otherwise occur if the court were forced to construe the claims after the close of evidence.²³³

The issue of exactly when the court should conduct a *Markman* Proceeding is a matter of considerable debate and implicates a number of competing policy considerations. The benefits of an early *Markman* determination can be substantial. An early claim construction may conserve the parties' and the court's resources by streamlining discovery and eliminating issues from the case. Furthermore, because cases frequently

²³¹ *Markman I* stated that a district court's pronouncement of the meaning of claim language "ordinarily can be accomplished by the court in framing its charge to the jury, but may also be done in the context of dispositive motions." *Markman I*, 52 F.3d 967, 981, 34 U.S.P.Q.2d (BNA) 1321, 1331 (Fed. Cir. 1995), *aff'd*, 517 U.S. 370, 38 U.S.P.Q.2d (BNA) 1461 (1996).

²³² See, e.g., *Loral Fairchild Corp. v. Victor Co. of Japan*, 911 F. Supp. 76, 79 (E.D.N.Y. 1996) ("With most aspects of trial hinging on this [*Markman*] determination — now 'strictly a question of law for the court' — a conscientious court will generally endeavor to make this ruling before trial."); cf. *Elf Atochem N. Am., Inc. v. Libbey-Owens-Ford Co.*, 894 F. Supp. 844, 857, 37 U.S.P.Q.2d (BNA) 1065, 1075 (D. Del. 1995).

²³³ *Lucas Aerospace, Ltd. v. Unison Indus., L.P.*, 890 F. Supp. 329, 332, 36 U.S.P.Q.2d (BNA) 1235, 1237 (D. Del. 1995).

turn on the meaning of the claims, an early claim construction may lay the basis for dispositive motions or even settlement.

Most courts and commentators agree, however, that a *Markman* Proceeding should not take place before at least some discovery has occurred.²³⁴ Construing the claims prior to any discovery is inefficient because it requires the court to construe claim terms that ultimately may not be in dispute.²³⁵ Such an early claim construction also may be more likely to produce an erroneous result because the court is not adequately informed. For example, during discovery the parties may become aware of evidence, such as prior art, that affects claim construction or may reach an agreed upon definition for one of the claim terms in dispute.²³⁶ For these reasons, most courts wait until the parties have conducted at least some discovery before conducting a *Markman* Proceeding.²³⁷

On the other hand, conducting the *Markman* Proceeding very late in the case, e.g., immediately before trial, can be inefficient. A late *Markman* Proceeding forfeits the benefits that an early claim construction can provide without necessarily affecting the outcome. In particular, it does not facilitate disposition of the case through either motion practice or settlement, nor does it narrow the scope of discovery, something that an early claim construction achieves. Also, if the court renders an interpretation different from what the parties argued, waiting until the end of the trial to determine the proper construction may require the parties to submit new arguments to the court,

²³⁴ E.g., *Toter Inc. v. City of Visalia*, 44 U.S.P.Q.2d (BNA) 1312, 1314-15 (E.D. Cal. 1997); KAHRL, *supra* note 198, § 12.02[A].

²³⁵ *Toter*, 44 U.S.P.Q.2d (BNA) at 1314; see *infra* Part VI.A regarding whether claim construction at the preliminary injunction stage should be law of the case.

²³⁶ See *Toter*, 44 U.S.P.Q.2d (BNA) at 1313.

²³⁷ See, e.g., *Moll v. N. Telecom, Inc.*, 37 U.S.P.Q.2d (BNA) 1839, 1842 (E.D. Pa. 1995).

wasting jurors' and the court's time. For these reasons, many courts hold the *Markman* Proceeding after at least some (or most) fact discovery is completed, but far enough in advance of trial to enable the parties to settle or appropriately tailor their arguments.²³⁸

Another difficult issue to consider is whether to conduct the *Markman* Proceeding before or after expert discovery. Holding the *Markman* Proceeding after expert discovery risks rendering large portions of experts' reports and depositions moot, as they may be relevant only to one of the parties' rejected claim constructions. Holding the *Markman* Proceeding before the parties submit expert reports, on the other hand, may require the court to construe the claims without the benefit of the experts' opinions on the technology and the meaning of claim terms to persons of skill in the art. More importantly, expert reports and discovery often narrow the issues in dispute, so holding a *Markman* Proceeding only after expert discovery may eliminate elements to be construed.

In *MediaCom Corp. v. Rates Technology, Inc.*, the court refused to consider expert testimony in ruling on a summary judgment motion.²³⁹ After oral arguments, however, the court determined that it had insufficient scientific background to properly construe the claim terms at issue.²⁴⁰ Consequently, the parties would have to prepare new briefs and the court would have to conduct an additional hearing in order to enable the court to rule on the motion. Thus, the court should proceed cautiously if it decides to disallow the submission of extrinsic evidence for the purpose of claim

²³⁸ See *id.* About 58% of the courts in one survey conducted claim construction after discovery but before trial, about 22% conducted it during discovery, and only 8% conducted it before discovery. ABA Section of Intellectual Property Law 1999 *Markman* Survey, IPL NEWSLETTER, Spring 2000, at 12, 14 [hereinafter ABA-IPL News].

²³⁹ 4 F. Supp. 2d 17, 23 (D. Mass. 1998).

²⁴⁰ *Id.* at 35.

construction, especially since the court, rather than the jury, will be weighing the evidence and can discount unreliable evidence accordingly.²⁴¹

B. Form of the Markman Proceeding

1. Claim Construction on a Paper Record

In certain cases, the court may construe the claims on the basis of briefs submitted by the parties, without a hearing.²⁴² In one ABA survey, however, only 18.5% of the respondents were involved in cases where the court rendered an interpretation based upon the briefs alone.²⁴³ Construing the claims on the basis of a paper record is consistent with the reasoning underlying the *Markman* decisions: that the primary sources for construing the claims are the intrinsic patent documents.²⁴⁴ However, construing the claims in this manner may prevent the court from gaining the full understanding necessary to render a proper claim construction.²⁴⁵

²⁴¹ See *Moll*, 37 U.S.P.Q.2d at 1842 (finding a more developed record was required in order to interpret two of the claim terms).

²⁴² See, e.g., *LRC Elecs., Inc. v. John Mezzalingua Assocs., Inc.*, 974 F. Supp. 171, 182 (N.D.N.Y. 1997); *Interactive Gift Express, Inc. v. Compuserve, Inc.*, No. 95 CIV. 6871, 1998 WL 247485, at *1 n.3 (S.D.N.Y. May 15, 1998) (“[N]o *Markman* hearing is needed in this case because the Court does not require expert or other testimony to aid it in its claim construction.”). The district court’s claim constructions were subsequently reversed. *Interactive Gift Express, Inc. v. Compuserve Inc.*, 256 F.3d 1323, 59 U.S.P.Q.2d (BNA) 1401 (Fed. Cir. 2001).

²⁴³ *ABA-IPL News*, *supra* note 238, at 14.

²⁴⁴ See *Markman I*, 52 F.3d 967, 979, 34 U.S.P.Q.2d (BNA) 1321, 1331 (Fed. Cir. 1995), *aff’d*, 517 U.S. 370, 38 U.S.P.Q.2d (BNA) 1461 (1996).

²⁴⁵ One option is to admit expert testimony in affidavit form when ruling on the paper record, although at least one court found this option did not provide sufficient information with which to render an

2. *Markman* Proceedings vs. Hearings

The court may feel it appropriate to consider a broader range of evidence and conduct a mini-trial directed to issues of claim construction. According to the American Bar Association’s 1999 Member Survey, 81.5% of courts held some form of proceeding for claim construction.²⁴⁶ District courts have broad discretion as to what evidence they will hear.²⁴⁷ In addition to the patent and its prosecution history, courts may receive documentary prior art that may bear on claim construction.²⁴⁸ Courts may also admit the testimony of experts and inventors.²⁴⁹

Such expert testimony may include testimony that educates the court about the technology at issue.²⁵⁰ It generally makes sense for the district court to liberally admit the testimony of qualified technical experts at the *Markman* Proceeding. The court may thereafter assess whether reliance on such evidence would be appropriate. One Federal Circuit judge stated in his dissent:

The court may ultimately decide that after consideration of “intrinsic evidence” the claims are unambiguous, and if so, will disregard any extrinsic

interpretation on two disputed claim terms. *Moll*, 37 U.S.P.Q.2d (BNA) at 1843.

²⁴⁶ *ABA-IPL News*, *supra* note 238, at 14.

²⁴⁷ See *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1308, 51 U.S.P.Q.2d (BNA) 1161, 1167-68 (Fed. Cir. 1999).

²⁴⁸ *Vitronics Corp. v. Conception, Inc.*, 90 F.3d 1576, 1584, 39 U.S.P.Q.2d (BNA) 1573, 1578 (Fed. Cir. 1996).

²⁴⁹ *Pitney Bowes*, 182 F.3d at 1308, 51 U.S.P.Q.2d (BNA) at 1167.

²⁵⁰ *Markman I*, 52 F.3d at 980, 34 U.S.P.Q.2d (BNA) at 1330.

the parties,²⁵⁵ however, absent consent, unilateral court appointment of a special master "shall be the exception and not the rule."²⁵⁶

The district court also has the authority to appoint a technical expert under Federal Rule of Evidence 706 ("Rule 706") to assist it in construing the claims.²⁵⁷ In the context of claim construction, a Rule 706 expert does not necessarily testify in court or offer evidence but rather helps the court to understand and reconcile the evidence, including the competing views of the parties' experts.²⁵⁸ The court may enlist the parties' assistance in finding and hiring the Rule 706 expert.²⁵⁹ Some commentators argue that the courts should utilize a Rule 706 expert rather than a special master, as the latter may conduct overly broad investigations and the court may grant the master's recommendation excessive deference.²⁶⁰ Even with a Rule 706 expert, however, the judge must be careful to avoid giving the experts' opinions too much credence, and so should employ them only in isolated cases.

²⁵⁵ Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 72 F.3d 857, 865, 37 U.S.P.Q.2d (BNA) 1161, 1166 (Fed. Cir. 1995), *rev'd on other grounds*, 535 U.S. 722, 62 U.S.P.Q.2d (BNA) 1705 (2002) (citation omitted).

²⁵⁶ FED. R. CIV. P. 53(b) (requiring "exceptional conditions" for bench trials or the presence of "complicated" issues for jury trials).

²⁵⁷ FED. R. EVID. 706(a); *see also*, e.g., Data Gen. Corp. v. IBM Corp., 93 F. Supp. 2d 89, 91 (D. Mass. 2000).

²⁵⁸ *Data Gen.*, 93 F.Supp.2d at 91.

²⁵⁹ FED. R. EVID. 706(a).

²⁶⁰ *See*, e.g., Si-Hung Choy, *Judicial Education After Markman v. Westview Instruments, Inc.: The Use of Court Appointed Experts*, 47 UCLA L. REV. 1421, 1425 n.8 (June 2000).

evidence presented. But the court would prefer to receive the full presentation in one hearing, and it will be up to the parties to allocate their presentation between intrinsic and extrinsic evidence.²⁵¹

By receiving extrinsic evidence, even if it ultimately is not considered, the trial court provides the Federal Circuit with a more complete record on which to conduct its *de novo* review.

The testimony of "legal experts", i.e., patent attorneys who seek to testify regarding the law of claim construction or the proper construction of claims, should receive different treatment, however. Because the testimony of such experts deserves little, if any, deference, courts should probably exclude it.²⁵² Indeed, courts typically do not allow such testimony to go to the ultimate legal issues.²⁵³ Nonetheless, similar expert analysis could be obtained by appointing an unbiased patent attorney, with knowledge of the relevant art, as a special master.²⁵⁴ This can be done without the consent of

²⁵¹ Thompson Consumer Elecs., Inc. v. Innovatron, S.A., 3 F. Supp. 2d 49, 52 (D.D.C. 1998) (citing Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1475, 46 U.S.P.Q.2d (BNA) 1169, 1191 (Fed. Cir. 1998) (Newman, J., dissenting)).

²⁵² *See Markman I*, 52 F.3d at 983, 34 U.S.P.Q.2d (BNA) at 1332.

²⁵³ *See id.*

²⁵⁴ FED. R. CIV. P. 53. *See*, e.g., Constant v. Advanced Micro-Devices, Inc., 848 F.2d 1560, 1563, 7 U.S.P.Q.2d (BNA) 1057, 1058 (Fed. Cir. 1988); Wang Labs., Inc. v. Oki Elec. Indus. Co., 15 F. Supp. 2d 166, 169 (D. Mass. 1998); Apex Computer Corp. v. Nintendo Corp., 34 U.S.P.Q.2d (BNA) 1167, 1171 (S.D.N.Y. 1996).

C. *Combining Markman Proceeding with Summary Judgment*

As previously noted, claim construction can often be dispositive, effectively deciding the issues of validity and/or infringement. Nonetheless, the formalities distinguishing claim construction and a summary judgment determination must be maintained. If the court construes claims at the same time it determines whether those claims are infringed, it may be tempted to utilize its knowledge of the accused device in the claim construction process, thereby rendering a tainted interpretation.²⁶²

D. *One District Adopts Mandatory Procedures: Local Rules of the Northern District of California*

One of the first courts to adopt specific rules for claim interpretation is the Northern District of California.²⁶³ These rules have tight deadlines and require that claims be construed before the infringement issues have been identified. The rules require that the parties' Case Management Statement, pursuant to Federal Rule of Civil Procedure 26(f), discuss, *inter alia*:

- (1) whether the parties wish for the court to hear live testimony,
- (2) any limits on discovery for the purposes of the *Markman* Proceeding, and

²⁶² *Jurgens v. McKasy*, 927 F.2d 1552, 1560, 18 U.S.P.Q.2d (BNA) 1031, 1037 (Fed. Cir. 1991) ("[A] claim is construed without regard to the accused product."); *Sofamor Danek Group, Inc. v. DePuy-Motech*, 74 F.3d 1216, 1221, 37 U.S.P.Q.2d (BNA) 1529, 1532 (Fed. Cir. 1996).

²⁶³ A complete set of the Northern District of California's local rules may be located on the Internet at <http://www.cand.uscourts.gov/>.

A *Markman* Proceeding often takes less than a day to complete, although it may span several days. How long the proceeding lasts depends not only on the complexity of the claim construction issues before the court and on the number of claims, but also on whether the district court decides to consider issues other than claim construction at the hearing. For example, the court may couple related issues, such as file wrapper estoppel or infringement as raised in motions, with claim construction.²⁶¹

²⁶¹ See, e.g., *Data Race, Inc. v. Lucent Techs., Inc.*, 73 F. Supp. 2d 698, 706 (W.D. Tex. 1999) (rendering a ruling upon the preliminary injunction and conclusive claim constructions in one opinion). *But see* *Schering Corp. v. Amgen Inc.*, 18 F. Supp. 2d 372, 379 n.13 (D. Del. 1998) ("[T]he Court declines to consider arguments of validity during the claim construction phase without more clear guidance from the Federal Circuit.").

- (3) the scheduling of a "Claim Construction Prehearing Conference."²⁶⁴

Within ten days after the Initial Case Management Conference, the patentee must submit a claim statement, commonly referred to as a "claim chart," that includes all asserted claims, accused embodiments, and a comparison chart showing where each element of each claim is found on each accused embodiment.²⁶⁵ This process frames the claim construction dispute so the alleged infringer can determine which elements are absent from the accused embodiment and then dispute the proper claim construction accordingly.

For discovery, the rules require that the patentee provide essentially all the information it has regarding such topics as the conception, development, reduction to practice, marketing, testing, and licensing of the invention recorded prior to the filing of the patent application.²⁶⁶ In addition, the patentee must produce the entire file history of the patent.²⁶⁷

The rules require the parties to make an early simultaneous exchange of claim terms they believe the court must define, and any elements they believe are subject to 35 U.S.C. § 112, ¶ 6.²⁶⁸ Thereafter, the parties must narrow and resolve differences, finalizing the list of disputed claim terms.²⁶⁹ Within twenty days of the exchange of the original claim term lists, the parties must submit proposed constructions of the remaining disputed

²⁶⁴ N.D. CAL. PATENT L.R. 2-1.

²⁶⁵ *Id.* at 3-1; see also W.D. MICH. L. CIV. R. 16.

²⁶⁶ N.D. CAL. PATENT L.R. 3-2(b).

²⁶⁷ *Id.* at 3-2(c).

²⁶⁸ *Id.* at 4-1(a).

²⁶⁹ *Id.* at 4-1(b).

terms, including identification of the disclosed structure(s), act(s), or material(s) for any § 112, ¶ 6 elements.²⁷⁰ After a specified period, the parties must then issue a "Joint Claim Construction and Prehearing Statement," which contains the definitions of claim terms that the parties agree upon, the parties' respective proposed constructions including all references and extrinsic evidence that the parties intend to offer in support of such constructions, the length of time the parties anticipate the hearing will take, and proposed dates for the hearing.²⁷¹ The parties must also include a list of all expert witnesses and a summary of their opinions to permit meaningful deposition of each expert.²⁷² These submissions provide the court with an opportunity to consider what form the *Markman* Proceeding should take and whether to circumvent presentation of expert testimony and other extrinsic evidence.

The parties must complete claim construction discovery within thirty days of filing the Prehearing Statement.²⁷³ Within 45 days of submission of the statement, the patentee must serve its opening brief for claim construction.²⁷⁴ Each defendant must serve a response within 14 days, after which the patentee has a week to prepare a reply brief.²⁷⁵ Finally, the court must hold a claim construction proceeding or hearing two weeks after the

²⁷⁰ *Id.* at 4-2(a).

²⁷¹ *Id.* at 4-3.

²⁷² *Id.* at 4-3(d).

²⁷³ *Id.* at 4-4.

²⁷⁴ *Id.* at 4-5(a).

²⁷⁵ *Id.* at 4-5(b), (c).

submission of the patentee's reply brief.²⁷⁶ The rules also permit the court to defer any motions involving claim construction issues raised before the completion of the *Markman* Proceeding until after a ruling is issued, at least when good cause can be shown.²⁷⁷

Although the Northern District of California rules could be criticized as imposing overly strict timelines and an inappropriately early claim construction, some courts have found them to be useful to establish a presumptively uniform approach, which can be modified, to the process of claim construction.²⁷⁸

VI. EFFECT OF CLAIM CONSTRUCTION FROM PRIOR PROCEEDINGS

A. Claim Construction Rendered in Connection with Motion for Preliminary Injunction

The trial court has no obligation to conclusively rule on claim construction when ruling upon a preliminary injunction motion.²⁷⁹ Numerous courts have expressly stated that their rulings were not binding law of the case, recognizing that decisions "made at this stage of the litigation tend to be 'based on incomplete evidence and a hurried

²⁷⁶ *Id.* at 4-6.

²⁷⁷ *Id.* at 1-2.

²⁷⁸ See Frank M. Gasparo, Markman v. Westview Instruments, Inc. and Its Procedural Shock Wave: The Markman Hearing, 5 J.L. & POL'Y 723, 754-55 (1997).

²⁷⁹ Sofamor Danek Group, Inc. v. DePuy-Motech, 74 F.3d 1216, 1221, 37 U.S.P.Q.2d (BNA) 1529, 1532 (Fed. Cir. 1996); Cargo Protectors v. Am. Lock Co., 92 F. Supp. 2d 926, 930 (D. Minn. 2000).

consideration of the issues."²⁸⁰ Nonetheless, some courts find the record sufficient to render an interpretation when ruling upon a motion for a preliminary injunction.²⁸¹

B. Collateral Effect of Claim Construction

In the interests of efficiency and finality, some judgments have a preclusive effect on later judgments. Issue preclusion, or collateral estoppel, bars relitigation of issues that were actually and necessarily determined in an earlier proceeding by a valid and final judgment if the determination was essential to the judgment.²⁸² Collateral estoppel does not have to be mutual and thus can apply to parties who were not involved in the original litigation.²⁸³ While any party may assert collateral estoppel, it can be held against only those who were parties (or in privity with those parties) in the

²⁸⁰ Aero Indus., v. John Donovan Enterprises-Florida, Inc., 80 F. Supp. 2d. 963, 970 (S.D. Ind. 1999).

²⁸¹ Data Race, Inc. v. Lucent Techs., Inc., 73 F. Supp. 2d 698, 707 (W.D. Tex. 1999); Boehringer Ingelheim Animal Health, Inc. v. Schering-Plough Corp., 6 F. Supp. 2d 324, 328 (D.N.J. 1998).

²⁸² See *In re Freeman*, 30 F.3d 1459, 1465, 31 U.S.P.Q.2d (BNA) 1444, 1448 (Fed. Cir. 1994); see also RESTATEMENT (SECOND) OF JUDGMENTS § 27 (1982) [hereinafter RESTATEMENT]; 18 JAMES W. MOORE ET AL., MOORE'S FEDERAL PRACTICE § 132.01[2] (3d ed. 1997).

²⁸³ See RESTATEMENT, *supra* note 282 § 29; 6 CHISUM, *supra* note 60, § 19.02.

earlier proceeding.²⁸⁴ Third parties can use nonmutual collateral estoppel defensively against a plaintiff or offensively against a defendant.²⁸⁵

Before the *Markman* decisions, disputes concerning the meaning of patent claims often were submitted to the jury.²⁸⁶ Thus, before a final judgment, there could be no finality for collateral estoppel purposes.²⁸⁷ Although neither the Supreme Court nor the Federal Circuit has yet ruled on the preclusive effect that claim interpretation has on later litigation, it appears from the district court decisions and pre-*Markman* case law that if all of the required elements are met, then collateral estoppel of claim interpretation is appropriate.

C. *Stare Decisis*

An open issue is whether the determination of claim construction from a prior litigation is entitled to *stare decisis*, that is, whether the first

²⁸⁴ See *Allen v. McCurry*, 449 U.S. 90, 94-95 (1980); *Parklane Hosiery Co. v. Shore*, 439 U.S. 322, 326 n.5 (1979); *Innovad, Inc. v. Microsoft Corp.*, 260 F.3d 1326, 1334 (Fed. Cir. 2001); *Pall Corp. v. Fisher Sci. Co.*, 962 F. Supp. 210, 213-14 (D. Mass. 1997) (noting offensive use of collateral estoppel of validity of the patent in patentee's subsequent action against a party that was neither a party to, nor originally represented in, the prior action would violate due process).

²⁸⁵ See *Parklane Hosiery*, 439 U.S. at 333-37 (allowing use of offensive nonmutual issue preclusion); *Blonder-Tongue Labs., Inc. v. Univ. of Ill. Found.*, 402 U.S. 313, 350, 169 U.S.P.Q. (BNA) 513, 527 (1971) (allowing use of defensive nonmutual issue preclusion).

²⁸⁶ See *Tol-O-Matic Inc. v. Proma Produkt-und Marketing Gesellschaft m.b.H.*, 945 F.2d 1546, 1550, 20 U.S.P.Q.2d (BNA) 1332, 1336 (Fed. Cir. 1991).

²⁸⁷ See *id.*

decision is entitled to deference.²⁸⁸ In *Markman I*, the Federal Circuit concluded *en banc* that the interpretation for patent claims is similar to statutory analysis.²⁸⁹ Prior statutory interpretations are entitled to *stare decisis* and will not be disturbed unless clearly erroneous.²⁹⁰ To reconsider "issues previously determined demands a clear and convincing showing of error; this requirement is not satisfied by reargument of former issues without more."²⁹¹

The Supreme Court took this desire for uniformity in claim interpretation one step further in *Markman II*:

Finally, we see the importance of uniformity in the treatment of a given patent as an independent reason to allocate all issues of construction to the court. . . . It was just for the sake of such desirable uniformity that Congress created the Court of Appeals for the Federal Circuit as an exclusive appellate court for patent cases . . . observing that increased uniformity would "strengthen the United States

²⁸⁸ Compare *KX Indus., L.P. v. Culligan Water Techs., Inc.*, 90 F. Supp. 2d 461, 491 (D. Del. 1999), with *KX Indus., L.P. v. PUR Water Purification Prods., Inc.*, 108 F. Supp. 2d 380, 389-90 (D. Del. 2000).

²⁸⁹ 52 F.3d at 987, 34 U.S.P.Q.2d (BNA) at 1336.

²⁹⁰ *Schott Optical Glass, Inc. v. United States*, 750 F.2d 62, 64 (Fed. Cir. 1984); see *In re Zurko*, 142 F.3d 1447, 1457-58, 46 U.S.P.Q.2d (BNA) 1691, 1700-01 (Fed. Cir. 1998), *rev'd on other grounds*, *Dickinson v. Zurko*, 527 U.S. 150 (1999).

²⁹¹ *Dep't of Energy v. Westland*, 565 F.2d 685, 690, 196 U.S.P.Q. (BNA) 316 (C.C.P.A. 1977).

patent system in such a way as to foster technological growth and industrial innovation."²⁹²

The Court reasoned that issue preclusion could not be applied against a defendant who was not a party to the earlier case, allowing each defendant to re-litigate the meaning of a claim.²⁹³ Although claim interpretation is a legal issue and so not subject to the vagaries of issue preclusion, it is subject to *stare decisis*.²⁹⁴ Claim determinations, therefore, ought not to be re-litigated on a regular basis.²⁹⁵ As the Supreme Court stated:

But whereas issue preclusion could not be asserted against new and independent infringement defendants even within a given jurisdiction, treating interpretive issues as purely legal will promote (though it will not guarantee) intrajudicial certainty through the application of *stare decisis* on those questions not yet subject to interjurisdictional uniformity under the authority of the single appeals court.²⁹⁶

This point was reiterated by the Federal Circuit, *en banc*, in *Cybor Corp. v. FAS Technologies, Inc.* when the court endorsed "national uniformity to the construction of a patent claim, a role that would be impeded if we

²⁹² 517 U.S. at 390, 38 U.S.P.Q.2d (BNA) at 1470-71 (citation omitted).

²⁹³ *Id.* at 391, 38 U.S.P.Q.2d (BNA) at 1471.

²⁹⁴ *Id.*

²⁹⁵ *See id.*

²⁹⁶ *Id.*

were bound to give deference to trial judge's asserted factual determinations incident to claim construction."²⁹⁷

Accordingly, while an answer may be inferred from the above-quoted material and other applicable authority, *stare decisis* should be applied cautiously until appellate courts are given clear guidance.

VII. APPELLATE REVIEW OF CLAIM CONSTRUCTION

The Federal Circuit reviews claim construction *de novo*.²⁹⁸ Although one circuit judge has opined that "common sense dictates that the trial judge's view will carry weight,"²⁹⁹ the Federal Circuit appears to give very little deference to district court rulings. According to one study, the Federal Circuit overrules forty percent of the claim constructions it hears.³⁰⁰

²⁹⁷ 138 F.3d 1448, 1455, 46 U.S.P.Q.2d (BNA) 1169, 1173-74 (Fed. Cir. 1998) (*en banc*).

²⁹⁸ The Federal Circuit reviews questions of fact under a clearly erroneous standard, while questions of law are subject to full and independent review, called *de novo* review. *See In re Asahi/Am. Inc.*, 68 F.3d 442, 444-45, 37 U.S.P.Q.2d (BNA) 1204, 1206 (Fed. Cir. 1995).

²⁹⁹ *Cybor*, 138 F.3d at 1462, 46 U.S.P.Q.2d (BNA) at 1180.

³⁰⁰ *Id.* at 1476 n.4, 46 U.S.P.Q.2d (BNA) at 1192 n.4 (Rader, J., dissenting) (figure based on a survey of every patent decision rendered by the Federal Circuit between April, 5 1995 and November, 24 1997).

A district court's claim interpretation is an interlocutory order³⁰¹ and so cannot be challenged until an entry of final judgment.³⁰² Because claim interpretation often is case dispositive, many critics argue that claim interpretation should be subject to interlocutory appeal instead.³⁰³ Despite the Federal Circuit's high rate of reversal on the basis of claim construction, the court has consistently refused to hear interlocutory appeals of claim construction rulings.³⁰⁴

³⁰¹ See *id.* at 1479, 46 U.S.P.Q.2d (BNA) at 1194 (Newman, J., additional views); Vivid Techs. Inc. v. Am. Science & Eng'g, 997 F. Supp. 93, 95 (D. Mass. 1997).

³⁰² See Craig Allen Nard, *Intellectual Property Challenges in the Next Century: Process Considerations in the Age of Markman and Mantras*, 2001 U. Ill. L. REV. 355 (urging the Federal Circuit to grant interlocutory appeals after *Markman* hearings); Gasparo, *supra* note 278, at 766-67 (arguing that interlocutory appeals on claim interpretation should be freely granted after *Markman* hearings).

³⁰³ The Federal Circuit has jurisdiction over orders involving a controlling question of law for which there is a substantial ground for a difference of opinion. 28 U.S.C. § 1292(c)(1), (b) (2000).

³⁰⁴ See *Cybor Corp.*, 138 F.3d at 1479, 46 U.S.P.Q.2d (BNA) at 1194 (Newman, J., additional views) ("Although the district courts have extended themselves, and so-called '*Markman* hearings' are common, this has not been accompanied by interlocutory review of the trial judge's claim interpretation. The Federal Circuit has thus far declined all such certified questions."); Flores v. Union Pac. R.R., No. Misc. 474, 1996 WL 673316, *1 (Fed. Cir. Nov. 14, 1996) (refusing to accept a case certified for interlocutory appeal after a *Markman* hearing).

VIII. CONCLUSION

Over the years since the *Markman* cases were decided, there have been a large number of decisions applying and interpreting *Markman*. Obviously, not all of these cases could be included in this review and analysis. Moreover, there are still many unanswered questions and other answered questions may be revisited by later decisions. Nonetheless, with the passage of time, courts appear to be adopting some uniformity in the mechanisms for construing claims, as this article summarizes.

APPENDIX

SAMPLE MODEL PROCEDURES

Courts have great latitude in creating procedures to handle patent cases. Part V.D of this article discusses the Patent Rules of the Northern District of California. What follows is another set of model procedures that may help the courts and parties in scheduling patent cases.¹

A. Infringement Claim Charts

1. Six (6) months after the Rule 16 Conference or Rule 26(f) meeting or other early triggering event:

Patentee shall serve on each party an initial claim chart ("Initial Infringement Claim Chart") which shall identify: (1) which claim(s) of its patent it alleges are being infringed; (2) which specific products or methods it alleges literally infringe each claim; and (3) where each element of each claim listed in (1) is found in each product or method listed in (2), including the basis for each contention that the element is present. If Patentee will rely on the doctrine of equivalents as to any element, it must explain in detail its factual basis for such reliance (i.e., insubstantial differences and function/way/result analyses).²

¹ Modified excerpts from Pretrial Scheduling Order used by Hon. Magistrate Judge Arthur J. Boylan, United States District Court, District of Minnesota, although the deadlines have been altered.

² The patentee may not know the full scope of infringement at this early stage. Permission to supplement claim charts as discovery proceeds should be available by motion.

2. Thirty (30) days after the initial claim chart is served:

Accused infringer shall serve on each party a responsive claim chart ("Responsive Infringement Claim Chart") that indicates with specificity which elements it admits are present in the accused device or process, and which it contends are absent, literally or under the doctrine of equivalents. Accused infringer shall explain in detail any alleged insubstantial differences and its function/way/result analysis.

3. Thirty (30) days after service of the responsive claim charts:

If Patentee will rely on the doctrine of equivalents as an alternative to any allegation of literal infringement, Patentee shall serve a supplemental infringing claim chart ("Supplemental Infringement Claim Chart") listing each asserted claim element that each accused infringer alleged was not present literally and provide a detailed explanation of its factual basis for such reliance (i.e., insubstantial differences and function/way/result analyses).

B. Invalidity Claim Charts

1. Six (6) months after the Rule 16 Conference or Rule 26(f) meeting or other early triggering event:

If there is an allegation of patent invalidity, the party challenging validity shall serve on each party an initial prior art claim chart ("Initial Prior Art Claim Chart") listing each alleged invalid claim and a detailed explanation of the factual basis for the claim. The party challenging validity shall serve on each party a copy of each piece of prior art relied upon in the Initial Prior Art Claim Chart.

2. Sixty (60) days after the Rule 16 Conference or Rule 26(f) meeting or other early triggering event:

If there is not an affirmative claim of invalidity (only a defense), the party challenging validity shall serve on each party an initial prior art claim chart ("Initial Prior Art Claim Chart") listing each alleged invalid claim and a detailed explanation of the factual basis for the claim. The party challenging validity shall serve on each party a copy of each piece of prior art relied upon in the Initial Prior Art Claim Chart.

3. Thirty (30) days after the Initial Prior Art Claim Chart is served:

Patentee shall serve on each party a responsive prior art claim chart ("Responsive Prior Art Claim Chart") that lists each alleged invalid claim and a detailed explanation of why the prior art relied upon by the challenger does not invalidate the respective claim.

C. Scheduling the *Markman* Proceeding

1. Following service of the final claim chart as set forth above, the Court shall be contacted for purposes of scheduling a proceeding to determine claim interpretation ("*Markman* Proceeding").³

- a. Forty-five (45) days in advance of the *Markman* Proceeding date, each side shall file with the Court a statement of the interpretation for which it contends along with a memorandum explaining how the

³ As discussed above, it is recommended that the proceeding be scheduled after the opportunity for some discovery. See *supra* Part V.A.

intrinsic evidence (claims, specification, and prosecution history of the patent(s)-in-suit) support that interpretation.

- b. If either side alleges that it also intends to rely on extrinsic evidence,⁴ it shall:

- (i) explain why extrinsic evidence is necessary;
- (ii) explain the extrinsic evidence it intends to offer; and
- (iii) if the extrinsic evidence is testimony (e.g., from an expert or inventor), submit to the Court such testimony in the form of (A) an affidavit to serve in lieu of direct testimony or (B) an outline of the testimony to be offered as agreed to by the parties or ordered by the Court.

- c. If one side indicates its intention to rely on extrinsic evidence, within fifteen (15) days the opposite party shall file a memorandum with the Court:

- (i) stating its position on the need for the extrinsic evidence offered by the other party; and
- (ii) stating whether, if the Court hears the extrinsic evidence offered by its opponent, it wants to present extrinsic evidence as well;

⁴ Dictionaries, treatises, and encyclopedias will not be treated as "extrinsic evidence" and reliance upon any of those materials does not invoke C(1)(b).

and, if so, providing the information required under subsections (i)-(iii) in part b, above.

- d. Ten (10) days before the date of the *Markman* Proceeding, the Court shall issue an Order stating:
- (i) whether it will receive extrinsic evidence, and if so, the particular evidence it will receive; and
 - (ii) whether the extrinsic evidence in the form of testimony shall be received in the form of the affidavits already filed (§ C(1)(b)(iii)(A)) or only in the form of live testimony from the affiants.